

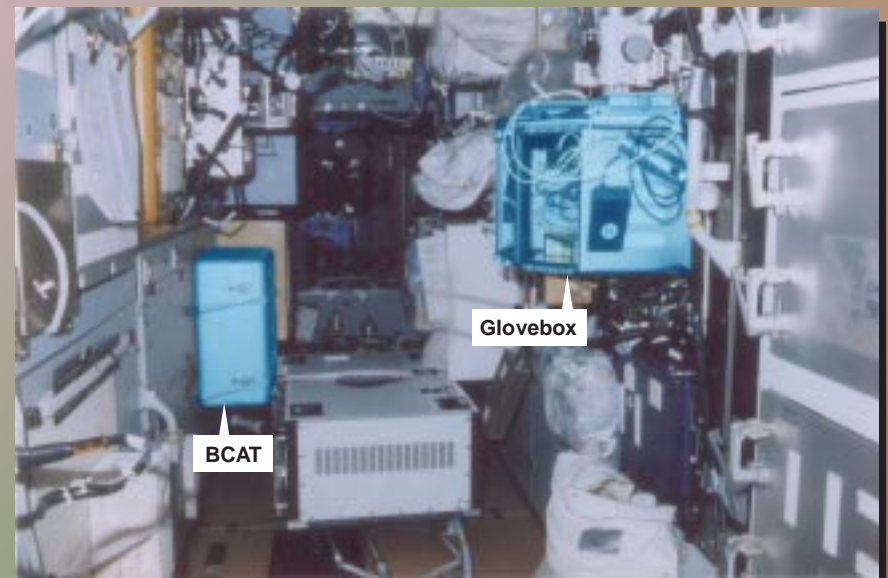
Binary Colloidal Alloy Test (BCAT)

OBJECTIVE

BCAT is an experiment which will help further the understanding of the most basic physical properties of colloids



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DEFINITIONS

Colloids are small solid particles suspended in fluid

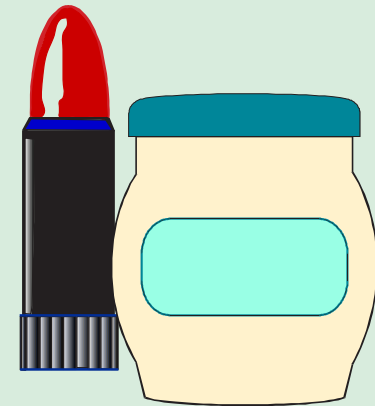
EXAMPLES:



paints/coatings



food/drinks



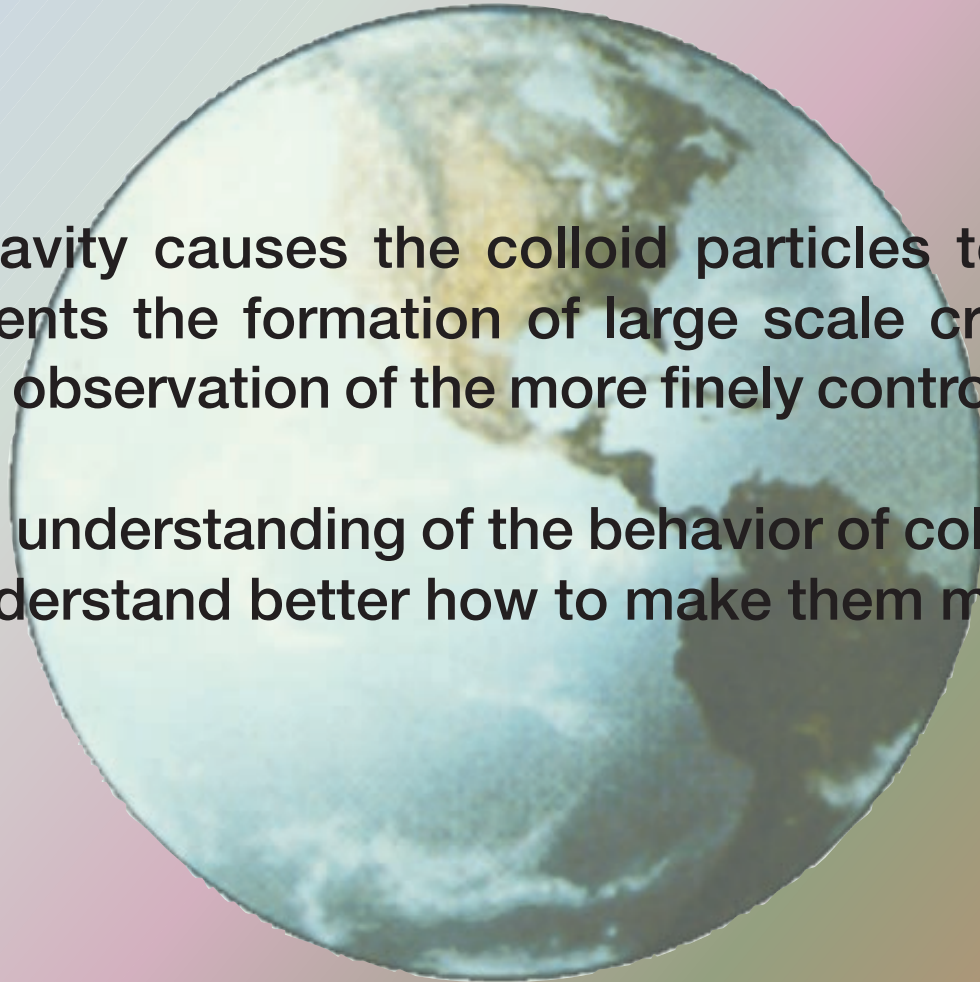
cosmetics

a large fraction of the industrial output of the nation is colloidal in form at some stage of its processing

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On Earth, gravity causes the colloid particles to settle. This settling prevents the formation of large scale crystallites and obscures the observation of the more finely controlled behavior.

An increased understanding of the behavior of colloids will help scientists understand better how to make them more useful for technology.



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BCAT aims to establish the feasibility of “colloid engineering” the manufacture of finely controlled materials from colloids.



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The binary colloids studied in BCAT are made of particles that are very tiny uniform plastic spheres. It has been found that these colloids form crystals which have many unique properties. Most importantly they can control the passage of light through them. Someday these colloids may form the basis of new classes of light switches, displays and optical devices that can fuel the evolution of next generation computer and communication technologies.

